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(71)Applicant : **NITTO DENKO CORP**

(72)Inventor : **YAMAMURA TAKASHI**

YAMAMOTO KAZUNARI

HANABUSA KENJI

SHIRAI HIROYOSHI

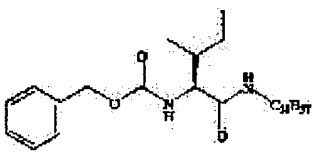
KIMURA MUTSUMI

SAKAKIBARA YASUHIKO

(54) PRODUCTION OF POROUS MOLDING

(57)Abstract:

PROBLEM TO BE SOLVED: To easily obtain a high-porosity, a large-pore-diameter molding in a desired shape by dissolving a porous moldable polymer in a solvent under heating, allowing the obtained polymer solution to gel by treatment with a gelling agent, and immersing the gel in a poor solvent for the polymer to extract the solvent therefrom.



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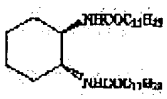
SOLUTION: The porous moldable polymer used is desirably the one having a number-average molecular weight of 50,000-500,000 and is exemplified by PS, polymethyl methacrylate, polyethylene



II

glycol, or PE. The gelling agent used is desirably at least one member selected from an amino acid derivative and a cyclohexanediamine derivative, more desirably, at least either of Z-L-I1e-NHC18H37 of formula I and a cyclohexane derivative of formula II. It is desirable that after the solvent is removed by extraction, the gel is further immersed in a solvent capable of extracting the gelling agent to remove the gelling agent therefrom by extraction. In this way, for example, a porous molding having a porosity of 50-95% and a pore diameter of 0.5-60 μm or a molding having a thickness of several mm to several tens mm or of at least 100 mm can be obtained.

LEGAL STATUS

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* NOTICES *

PRIOR ART

[Description of the Prior Art] There are many methods among the manufacture methods of a porosity molding object, and it is already used in the field of much industry. For example, after dissolving the polymer which can dissolve in water and the dissolving solvent with a solvent and considering as a polymer solution, it casts on a support base material, Coacervation is formed by being immersed in underwater [which is the poor solvent of polymer]. To the method and polymer which carry out extract clearance of the solvent and acquire a porosity molding object, CaCO3, SiO2 etc., after adding and kneading a particle, extruding in the shape of a film and adding a drawing process depending on the case How to remove a particle and form a porosity molding object using the solvent which dissolves a particle, Moreover, after mixing and kneading the solvent of a non-volatile like a liquid paraffin to polymer, extruding in the shape of a film and adding a drawing process depending on the case, it is the poor solvent of polymer and there is the method of removing a solvent with the solvent which can extract remove a solvent, and forming a porosity molding object etc. Although all of these methods are effective in processing of the shape of a comparatively thin sheet, only what also has a comparatively small aperture is difficultly obtained by making thick sheets and a thick three-dimensional Plastic solid. Especially the porosity molding object acquired with a wet method had the problem that it was difficult to make a skin on a front face, or to become fine porosity, and to acquire the porosity molding object of the big aperture as a molding object.
[0003] As a method of on the other hand acquiring a porosity molding object, although the method of using as a hole the crevice which sinters a polymer particle, welds between particles and is formed between particles is developed, generally the polymer supplied with a particle-like gestalt in this method, especially the polymer of ultrahigh molecular weight are not used, and general-purpose polymer cannot necessarily be used. According to this method, the porosity molding object which suited the mold freely using metal mold etc. is also producible, but the non-filling section of the grain child with whom restoration of a particle does not go well at the time of molding is made, and molding of a complicated form etc. is difficult in the poor flow of a particle in making a defect.
[0004] Therefore, it was difficult to produce a porosity molding object using general-purpose polymer, and especially the thing to acquire for a big aperture and a high void content was difficult. Moreover, still sufficient technology is not known about how to produce the porosity molding object which has a complicated configuration.

[Translation done.]